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(54) **INFLATABLE COIN BANK**

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A63H 3/00 (2006.01)

(52) **U.S. Cl.**
CPC ***A45C 1/12*** (2013.01); ***A63H 3/005*** (2013.01)

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CPC A45C 1/12; E05G 1/005; A63H 3/005; A63H 3/06
USPC ..... 232/4 R; 446/8, 9, 226
See application file for complete search history.

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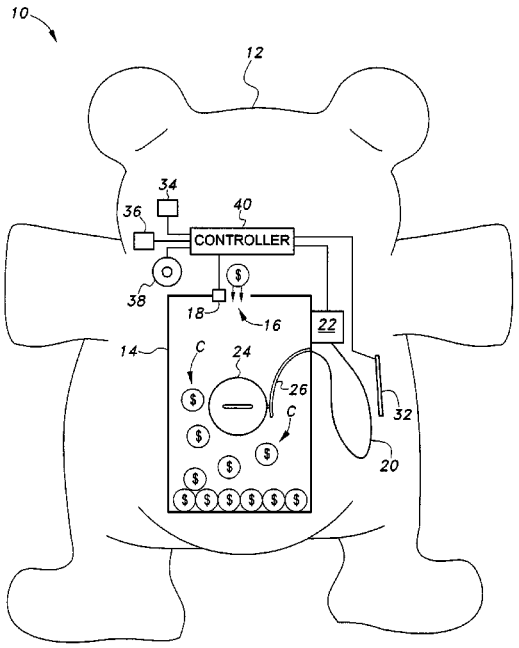
(57) **ABSTRACT**

The inflatable coin bank is a decorative coin bank which grows in size with each coin inserted and stored therein. The inflatable coin bank includes a flexible housing with a coin receptacle received therein. The receptacle has a slot formed therethrough for receiving the coins. A sensor is mounted adjacent the slot formed through the receptacle for selectively generating an actuation signal when a coin passes through the slot. An inflatable bladder is further received within the flexible housing. An air pump is in communication with the inflatable bladder and the sensor, such that the air pump partially inflates the inflatable bladder with a pre-determined volume of air when the sensor generates the actuation signal. In this way, the inflatable bladder grows in volume with each insertion of a coin through the slot.

18 Claims, 3 Drawing Sheets



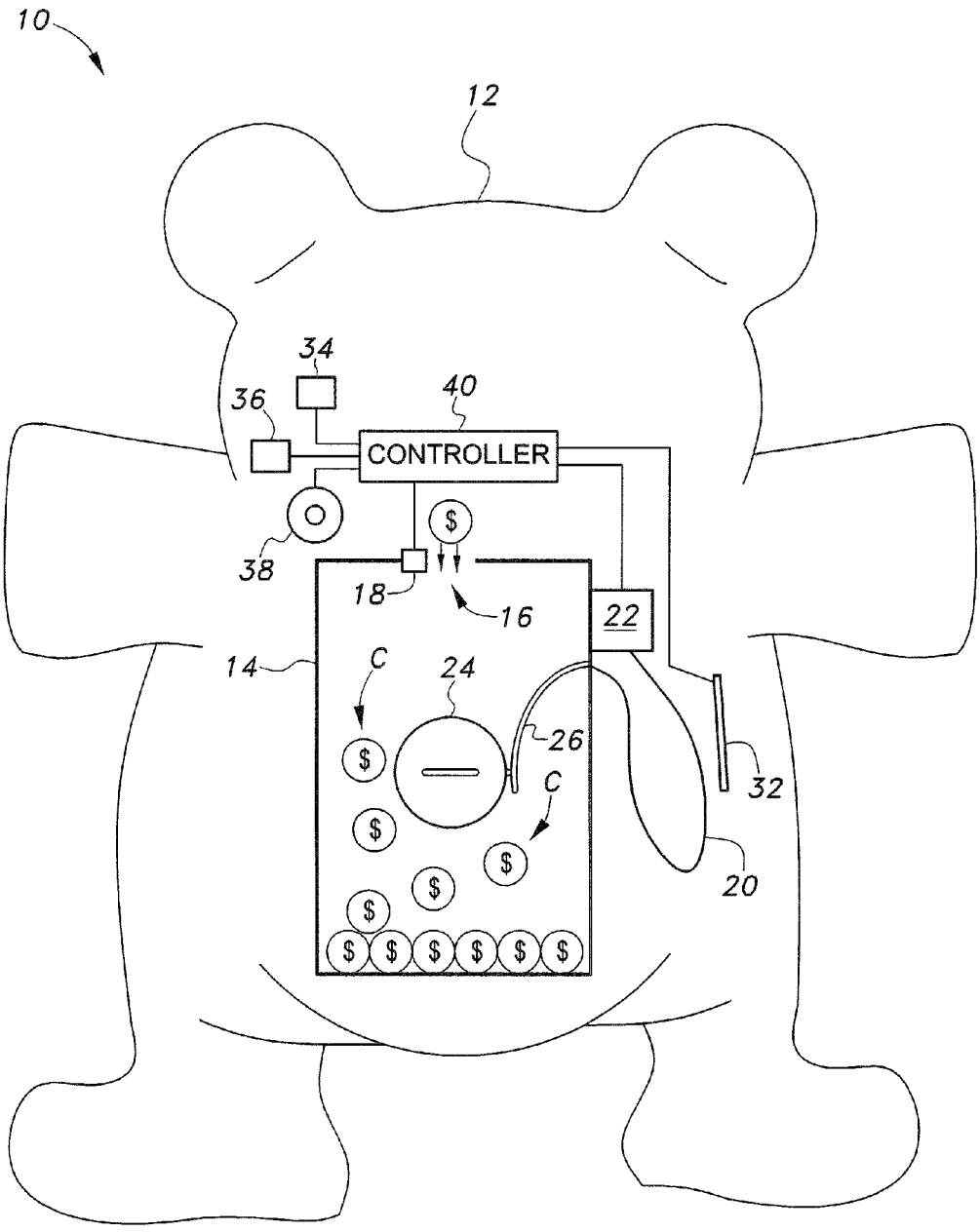


Fig. 1

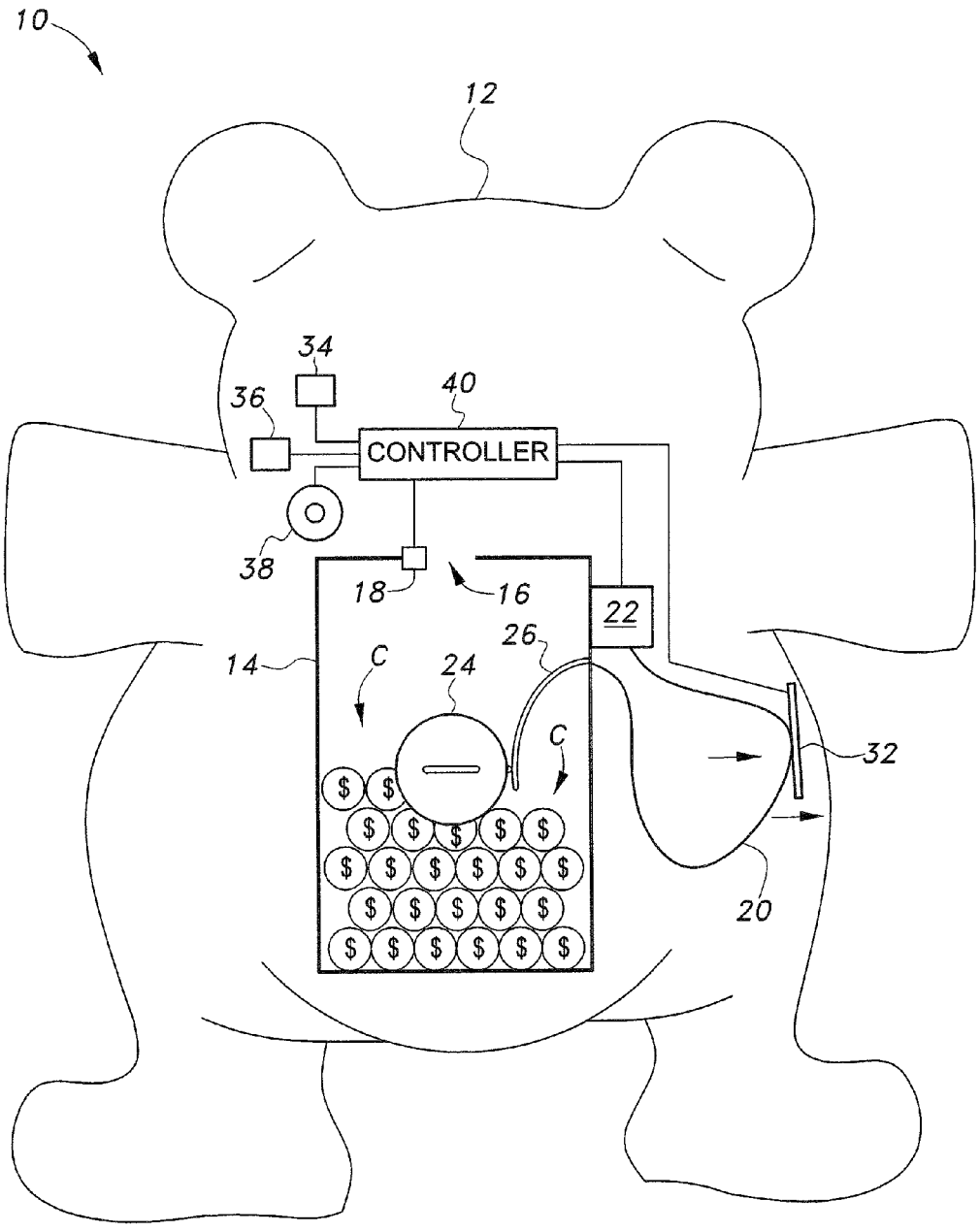


Fig. 2

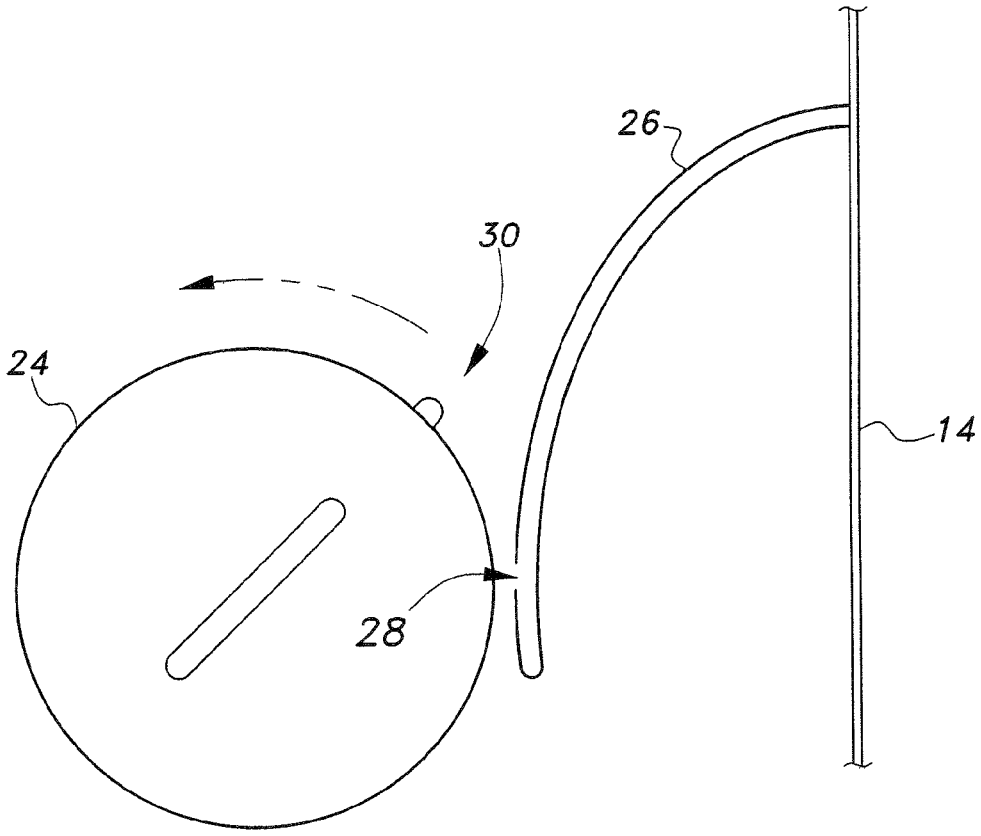


Fig. 3

INFLATABLE COIN BANK

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to banks for coins and the like, and particularly to a decorative coin bank which is inflatable for providing a visual indication of volume of coins stored therein.

2. Description of the Related Art

Decorative coin banks, such as so-called "piggy banks" and the like, are typically formed from rigid opaque materials, such as ceramic, plastic, metal or the like. Despite their traditional usage for saving and storing coins, such banks have the drawback that there is no visual indication of how much money is stored therein. In order to determine, or even estimate, the value of coins saved in the bank, the bank must be opened, which may involve a mechanical process which is difficult for the typical child user. Thus, an inflatable coin bank addressing the aforementioned problems is desired.

SUMMARY OF THE INVENTION

The inflatable coin bank is a decorative coin bank, at least a portion of which grows in size with each coin inserted and stored therein. The inflatable coin bank includes a flexible housing, which is preferably decorative, such as, for example, that of a stuffed animal or the like. A receptacle is received within the flexible housing for storing coins. The receptacle has a slot formed therethrough for receiving the coins to be stored in the receptacle. A door in the receptacle provides selective access to the interior of the receptacle for accessing the stored coins. A sensor is mounted adjacent the slot formed through the receptacle for selectively generating an actuation signal when a coin passes through the slot.

An inflatable bladder is further received within the flexible housing. An air pump is in communication with the inflatable bladder and the sensor, such that the air pump partially inflates the inflatable bladder with a pre-determined volume of air when the sensor generates the actuation signal. In this way, the inflatable bladder grows in volume with each insertion of a coin through the slot. Using the example of a stuffed animal as the housing, the stuffed animal appears to grow in size with each insertion of a coin. A deflation valve selectively seals the inflatable bladder. The deflation valve is coupled with the door such that the deflation valve is opened when the door is opened, thus causing the inflatable bladder to deflate when the door is opened for coin removal.

These and other features of the present invention will become readily apparent upon further review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** diagrammatically illustrates an inflatable coin bank according to the present invention.

FIG. **2** diagrammatically illustrates the inflatable coin bank of FIG. **1** in an inflated configuration.

FIG. **3** diagrammatically illustrates actuation of a deflation valve of the inflatable coin bank.

Unless otherwise indicated, similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The inflatable coin bank **10** is a decorative coin bank which grows in size with each coin C inserted and stored therein. The inflatable coin bank **10** includes a flexible housing **12**, which is preferably decorative. In the example of FIGS. **1** and **2**, the flexible housing **12** is similar to that of a stuffed animal. It should be understood that the flexible housing **12** may have any desired size, shape or appearance, and may be stuffed with any desired material, such as conventional polystyrene beads, cotton fiber, or the like. Additionally, it should be understood that the inflatable coin bank **10** may be used to store and save any suitable type of coin or other currency, and that coins C are shown for exemplary purposes only.

A receptacle **14** is received within the flexible housing **12** for storing coins C. It should be understood that the substantially rectangular receptacle **14** is shown for exemplary purposes only and that receptacle **14** may be any suitable type of receptacle such as those commonly found in coin banks. The receptacle **14** has a slot **16** formed therethrough for receiving the coins C to be stored therein. It should be understood that the positioning of slot **16** relative to receptacle **14** is shown for exemplary purposes only, and that slot **16** may be located in any desired location, and may be accessed through flexible housing **12** in any suitable way, dependent upon the nature of flexible housing **12**.

As shown, a door **24** in the receptacle **14** provides selective access to the interior of the receptacle **14** for accessing the stored coins C, similar to a conventional coin bank. It should be understood that door **24** is shown for exemplary purposes only, and may have any desired size, overall contour or positioning relative to receptacle **14**. Further, a sensor **18** is mounted adjacent the slot **16** formed through the receptacle **14** for selectively generating an actuation signal when a coin C passes through the slot **16**. It should be understood that sensor **18** may be any desired type of sensor for detecting the passage of coin C, such as an optical sensor, a mechanical sensor, an inductive sensor or the like.

An inflatable bladder **20** is further received within the flexible housing **12**. It should be understood that the inflatable bladder **20** is shown for exemplary purposes only and may have any suitable positioning within flexible housing **12**, relative to receptacle **14**. It should further be understood that inflatable bladder **20** may have any suitable size or overall contouring, and may be formed from any desired material which is inflatable and airtight. An air pump **22** is in communication with the inflatable bladder **20** and the sensor **18**, such that the air pump **22** partially inflates the inflatable bladder **20** with a pre-determined volume of air when the sensor **18** generates the actuation signal. In this way, the inflatable bladder **20** grows in volume with each insertion of a coin C through the slot **16**. Using the example of a stuffed animal as the housing **12**, the stuffed animal appears to grow in size with each insertion of a coin C through slot **16**. In FIG. **2**, the inflatable bladder **20** is shown with an increased volume corresponding to the increased number of coins C stored in receptacle **14**. It should be understood that inflatable bladder **20** may be in fluid communication with air pump **22** in any suitable manner, including any desired valving, such as a one-way valve, tubes, hoses, linkages or the like. Further, it should be understood that any suitable type of air pump or other source of pressured air may be utilized.

As shown, sensor **18** may communicate with air pump **22** through a separate controller **40**. Controller **40** may be any suitable type of control circuitry, microprocessor, programmable logic controller or the like. Controller **40** receives the actuation signal from sensor **18** and generates an output signal for actuating air pump **22** for a pre-set duration of

time in order to fill the inflatable bladder **20** with the pre-determined volume of air.

Additionally, a pressure sensor **32** (or any other suitable type of contact sensor or the like) may be further received within the flexible housing **12**, as shown. The pressure sensor **32** is positioned such that when the inflatable bladder **20** reaches a pre-determined maximum volume, the air pump **22** is deactivated. For a contact-type sensor, such as in the example of FIG. **2**, when inflatable bladder **20** contacts the sensor **32**, sensor **32** generates a signal which is received by controller **40**. Controller **40** then prevents the air pump **22** from further inflating the inflatable bladder **20**. It should be understood that any suitable type of sensor or switching mechanism may be used to detect when inflatable bladder **20** reaches the pre-determined maximum volume, such as a pressure plate, a contact switch, a gas pressure sensor for measuring the pressure inside inflatable bladder **20**, or the like.

In addition to the inflation of the inflatable bladder **20**, one or more signaling devices may also be in communication with sensor **18**, through controller **40**. For example, visual indicators **34**, **36**, which may be light emitting diodes (LEDs) of different colors or the like, may be actuated with each insertion of a coin C. Alternatively, or in addition to, an audio signaling device **38**, such as a speaker or the like, may further provide audio signaling when the coin C passes through the slot **16**. It should be understood that controller **40** may be programmed to generate distinct visual and/or auditory patterns or signals.

A deflation valve **26** preferably selectively seals the inflatable bladder **20**. As best shown in FIG. **3**, the deflation valve **26** is coupled with the door **24** such that the deflation valve **26** is opened when the door **24** is opened. In the closed configuration of FIGS. **1** and **2**, the seal **30** fixed to door **24** covers opening **28** of deflation valve **26**. When door **24** is rotated to open the door, as in the configuration shown in FIG. **3**, the seal **30** is rotated away from opening **28**, thus opening the valve **26**. This causes the inflatable bladder **20** to deflate when the door **24** is opened for coin removal. It should be understood that the rotating circular door **24** is shown for exemplary purposes only, and that any suitable type of door, and any corresponding linkage between the door and the deflation valve, may be utilized for selective deflation of inflatable bladder **20** when the door is opened.

It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

I claim:

1. An inflatable coin bank, comprising:

a flexible housing;

a receptacle received within said flexible housing, said receptacle having a slot formed therethrough for receiving coins to be stored in said receptacle;

a sensor mounted adjacent the slot formed through said receptacle for selectively generating an actuation signal when a coin passes through the slot;

an inflatable bladder received within said flexible housing;

an air pump in communication with said inflatable bladder and said sensor, such that said air pump partially inflates said inflatable bladder with a pre-determined volume of air when said sensor generates the actuation signal; and

a controller operatively coupled to at least said sensor to facilitate the communication of the sensor and the air pump.

2. The inflatable coin bank as recited in claim **1**, further comprising a door for providing selective access to an interior of said receptacle.

3. The inflatable coin bank as recited in claim **2**, further comprising a deflation valve for selectively sealing said inflatable bladder, the deflation valve being coupled with the door such that the deflation valve is opened when the door is opened.

4. The inflatable coin bank as recited in claim **1**, further comprising a pressure sensor received within said flexible housing, wherein when said inflatable bladder reaches a pre-determined maximum volume, said air pump is deactivated.

5. The inflatable coin bank as recited in claim **1**, further comprising at least one signaling device in communication with said sensor, such that the at least one signaling device generates a sensory signal when the coin passes through the slot.

6. The inflatable coin bank as recited in claim **5**, wherein the at least one signaling device comprises at least one visual indicator.

7. The inflatable coin bank as recited in claim **6**, wherein the at least one signaling device further comprises an audio indicator.

8. An inflatable coin bank, comprising:

a flexible housing;

a receptacle received within said flexible housing, said receptacle having a slot formed therethrough for receiving coins to be stored in said receptacle;

a controller;

a sensor mounted adjacent the slot formed through said receptacle for selectively generating an actuation signal when a coin passes through the slot;

wherein the actuation signal being received by said controller;

at least one signaling device in communication with said sensor via said controller, such that the at least one signaling device generates a sensory signal when the coin passes through the slot;

wherein the sensory signal being responsive to said actuation signal of said sensor;

an inflatable bladder received within said flexible housing; and

an air pump in communication with said inflatable bladder and said sensor via said controller, such that said air pump partially inflates said inflatable bladder with a pre-determined volume of air when said sensor generates the actuation signal;

wherein said controller activates said air pump to pump the pre-determined volume of air.

9. The inflatable coin bank as recited in claim **8**, further comprising a door for providing selective access to an interior of said receptacle.

10. The inflatable coin bank as recited in claim **9**, further comprising a deflation valve for selectively sealing said inflatable bladder, the deflation valve being coupled with the door such that the deflation valve is opened when the door is opened.

11. The inflatable coin bank as recited in claim **8**, further comprising a pressure sensor received within said flexible housing, wherein when said inflatable bladder reaches a pre-determined maximum volume, said air pump is deactivated.

12. The inflatable coin bank as recited in claim **8**, wherein the at least one signaling device comprises at least one visual indicator.

13. The inflatable coin bank as recited in claim 8, wherein the at least one signaling device further comprises an audio indicator.

14. An inflatable coin bank, comprising:

a flexible housing;

a receptacle received within said flexible housing, said receptacle having a slot formed therethrough for receiving coins to be stored in said receptacle;

a door for providing selective access to an interior of said receptacle;

a sensor mounted adjacent the slot formed through said receptacle for selectively generating an actuation signal when a coin passes through the slot;

an inflatable bladder received within said flexible housing;

an air pump in communication with said inflatable bladder and said sensor, such that said air pump partially inflates said inflatable bladder with a pre-determined volume of air when said sensor generates the actuation signal;

a deflation valve for selectively sealing said inflatable bladder, the deflation valve being coupled with the door such that the deflation valve is opened when the door is opened; and

a controller for receiving the actuation signal from said sensor, and operating the air pump in response to receipt of the actuation signal.

15. The inflatable coin bank as recited in claim 14, further comprising a pressure sensor received within said flexible housing, wherein when said inflatable bladder reaches a pre-determined maximum volume, said air pump is deactivated.

16. The inflatable coin bank as recited in claim 14, further comprising at least one signaling device in communication with said sensor, such that the at least one signaling device generates a sensory signal when the coin passes through the slot.

17. The inflatable coin bank as recited in claim 16, wherein the at least one signaling device comprises at least one visual indicator.

18. The inflatable coin bank as recited in claim 16, wherein the at least one signaling device further comprises an audio indicator.

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